REMARKS

In order to comply with 37 CFR 1.121 (b)(3)(ii) and 37 CFR 1.125 (c) indicated in the notice, a marked-up specification with 13 pages and a clean copy of substitute specification with 11 pages corresponding to the marked-up version have been prepared and a marked-up abstract and a clean copy of substitute abstract are made too.

Respectfully submitted

JUNG-CHANG CHIANG

Dated: September 29, 2005

MARKED-UP SPECIFICATION
COUPLING DEVICE FOR AN ARTIFICIAL MODEL

BACKGROUND OF THE INVENTION

1. Field of the Invention:

The present invention relates to a coupling device for an artificial model, and, particularly, to a coupling device, which has a male connecting member and a female connecting member being attached to two opposite connecting surfaces of the neck and the hip of the artificial model respectively to ~~secure~~ allow the two connecting surfaces being joined to each other tightly by way of two sets of elastic bodies ~~engaging with each other~~.

2. Description of Related Art:

The conventional artificial model 30 shown in ~~Referring to~~ Fig. 10[,] ~~the conventional artificial model 30 at the~~ provides a hip part with a connecting surface 31 and ~~the~~ a thigh part with another connecting surface 32 ~~thereof provides a stem device 33 at two opposite connecting surfaces respectively~~. Further, a joining device 33 is provided for joining the connecting surfaces 31, 32. Usually, the joining device 33 has a locating stem extending outward from one of the connecting surfaces 31, 32 and a locating hole being disposed in the other one of the connecting surfaces 31, 32 for fitting with each other. While it is in operation, the thigh part is detached from the hip part first for the pants being put on and then the locating stem of the joining device 33 is inserted back into the locating hole for the connecting surfaces 31, 32 being joined to each other. However, it is a fact that the joining device 33 often is incapable of obtaining a firm joint between the connecting surfaces 31, 32 with the locating stem and the locating hole. Besides, a clearance 34 often creates between the connecting surfaces 31, 32 after a period time of using and the clearance 34 worsens the undesirable connection of the thigh part to the hip part. Hence, the

thigh part 32 becomes unstably disposed and it results in the artificial model with an unbalanced center of gravity. Under this circumference, it is easy for the artificial model falling down or exhibited clothes being askew. Further, once the joining device 33 is out of order, it is hard to be fixed unless the whole set of the artificial model is delivered to the repair shop. But, it is extremely inconvenient and less economical. ~~In order to put on pants, it is necessary to detach the thigh part 32 from the hip part 30 in advance and the pants can be put on the thigh part 32 before the stem device 33 on the thigh part 32 can be inserted into the hip part 30. However, the stem device 33 is too much simply constructed so that it is not possible to obtain a firm joint between the hip part 31 and the thigh part due to a clearance 34 being generated. Moreover, it is easy for the thigh part to oscillate and result in the artificial model falling down or askew exhibited clothes due to an unbalancing center of gravity of the artificial model. Furthermore, once the stem device 33 is out of order, it is hard to be fixed unless the whole set of the artificial model is delivered to the repair shop and it becomes extremely inconvenient and less economical.~~

Referring to Figs. 11A, 11B and 12, a conventional pin 442 and a locating disk 42 are illustrated. It can be seen that the locating disk 42 has a hollow center 422 for being inserted with the insert head 441, ~~and~~ Two ~~two~~ opposite elongated grooves 423 and two opposite recess 424 are disposed surrounding the hollow center 422 with the grooves 423 being perpendicular to the recesses. The pin 442 ~~can pass~~ passes through the hollow center 423 and ~~be~~ is rotated 90° to engage with the recesses 424. The preceding arrangement ~~of~~ with regard to the pin 442 ~~with~~ and the locating disk 42 ~~are~~ is mostly used at the thigh separation part 35 of the artificial model [(] as shown in Fig. 12[)] and it has the following disadvantages:

1. The position of the thigh separation part 35 is improperly disposed ~~so that~~ and it is unpleasing to the eye while shorts or swimming suit is put on[;].

2. Only a pair of elongated grooves 423 is provided ~~so that~~ it is ~~not~~

~~easy~~ hard to locate the pin 442 properly due to a long rotational path being turned.

3. It is easy for the pin 442 and the locating disk 42 ~~to become~~ being out of order ~~due to~~ because the pin 442 ~~being turned~~ is rotated all the time ~~so that~~ and it is severely worn out due to friction between the pin 442 and the locating disk 42 ~~results in severe wearing out~~.

4. It is possible for the pin to ~~be turned~~ roll into the hollow center with one direction only ~~so that~~ and it is easy for the thigh part 36 being inversely mounted carelessly as [(] shown in Fig. 11[)].

5. In case of the artificial model 30 ~~is~~ being in a state of a posture of sitting with two thighs being cross to each other as shown in Fig. 13, the pin 442 is incapable of being turned into the recesses 424 if the locating disk 42 ~~provides~~ is disposed at an improper angular position ~~angle~~ and it leads to ~~results in~~ the thigh 37 being unable to rotate ~~be rotated~~ in place.

~~Further~~, a further ~~another~~ conventional locating disk, which is similar to the locating disk 42, ~~provides~~ only has the elongated grooves 423 without the recesses 424 and ~~only so that~~ it is ~~not possible to perform~~ incapable of performing the job of locating ~~because of no recesses 424~~.

SUMMARY OF THE INVENTION

A main object of the present invention is to provide a coupling device for an artificial model ~~for~~ in which connecting surfaces ~~being~~ are joined tightly after two half parts of the coupling device being ~~inserted into~~ engaged to each other.

Another object of the present invention is to provide a coupling device for an artificial model ~~with~~ in which the male and the female connecting members and locating threaded holes being fabricated with standardized sizes ~~fabrication~~ so that both legs of the artificial model ~~can be interchanged~~ are interchangeable and different artificial models ~~model also can be interchanged so as to meet economical principle~~ too for enhancing economical purpose.

A further object of the present invention is to provide a coupling device for an artificial model ~~with~~ in which parts thereof being fastened ~~by way of~~ with bolts so that it is convenient for replacing ~~damage~~ damaged parts quickly without the need of being fixed in shop.

A further object of the present invention is to provide a coupling device for an artificial model ~~with~~ in which two sets of elastic bodies ~~to~~ allow the male connecting member, the female connecting member and the pin ~~generating a defense compressing~~ to form an anti-compressed space during rotating such that ~~it is possible to obtain a~~ the coupling device with low wear, little resistance and ~~low chance~~ least possibility of damage can be obtained in addition to being easily ~~and it is more easy to be~~ operated and assembled.

BRIEF DESCRIPTION OF THE DRAWINGS

The other objects and features of the present invention can be more fully understood by reference to the following description of preferred embodiments in company with the drawing, in which:

Fig. 1 is an exploded perspective view of a male joining ~~member~~ part of a coupling device for an artificial model according to the present invention;

Fig. 2 is an exploded sectional view of the male joining ~~member~~ shown in Fig. 1;

Fig. 3 is an assembled perspective view of the male joining ~~member~~ part shown in Fig. 1;

Fig. 4 is an exploded perspective view of a female joining ~~member~~ part of the coupling device for an artificial model according to the present invention;

Fig. 5 is an exploded sectional view of the female joining ~~member~~ part shown in Fig. 4;

Fig. 6 is an assembled perspective view of the female joining ~~member~~ part shown in Fig. 4;

Figs. 7A and 7B are plan views illustrating movements of positioning done by an insertion member in the coupling device of the present invention;

Fig. 8 is a sectional view of the coupling device for an artificial model according to the present invention;

Fig. 9A is a sectional view illustrating the coupling device being embodied in the artificial model with the left side thereof being in a state of opening;

Fig. 9B is a sectional view illustrating the coupling device being embodied in the artificial model with the right side thereof being in a state of opening;

Fig. 10 is a plan view illustrating a conventional hip joint of the artificial model;

Fig. 11A and 11B are plan views illustrating movements of positioning done by a conventional pin;

Fig. 12 is a plan view illustrating another conventional hip joint of the artificial model; and

Fig. 13 is a plan view illustrating the seat posture of the artificial model;

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figs. 1 to 3, a coupling device for an artificial model according to the present invention provides a male joining part 10, which includes a first base disk 11, a first front positioning plate 12, a first rear positioning lock plate 13 and an insertion member 14.

The first base disk 11 is provided with an upright rim 113 at the periphery thereof ~~is provided with an upright rim 113~~ and ~~at the center thereof is provided with~~ a hollow center ~~central part~~ 112. Two ~~opposite~~ threaded holes 114 ~~with respect to the hollow central part 112 and~~ are disposed near the upright rim 113 and opposite to each other with respect to the axis of the hollow center 112 ~~pierce the base disk 11 and the two threaded holes allow the base disk 11 to be located at one of the connection interfaces on the separated hips~~. The threaded through holes 114 extend downward passing through two cylindrical posts attached to the lower facial side of the first base disk 11 to be located at

one of the connecting surfaces of the hip part and the thigh part. The first base disk 11 ~~at two facial sides thereof~~ has a recess 115, 117 at the two facial sides thereof respectively and the recesses 115, 117 ~~at the circumferences thereof~~ have a flange 116, 118 at the circumferences thereof respectively. A first partition between the recesses 115, 117 surrounds the hollow center ~~central part~~ 113 and is provided with four threaded holes 111 with a countersink top respectively.

The first front positioning plate 12 is circular and disposed in the recess 115 of the first base disk 11 with a central protrusion part 123 such that the bottom of the central protrusion part 123 is formed a recessing 124. The protrusion part 123 further has an elongated hollow ~~part~~ center 122. In addition, the first front positioning plate 12 is provided with four ~~threaded~~ through holes 121 with each of the through holes 121 being formed with two opposite countersinks respectively. ~~corresponding~~ The through holes 121 correspond to the threaded holes 111 and are surrounded with ~~of the base disk 11 and each of the threaded holes 121 has~~ a conical lower end 1211 extending outward from the bottom thereof.

The first rear positioning lock plate 13 is provided with an annular shape and disposed in the recess 117 of the first base disk 11 with four threaded holes 131 corresponding to the threaded holes 111 too ~~of the base disk 11 and the threaded holes 121 of the front positioning plate 12~~. Further, the first rear positioning lock plate 13 has an aperture 133 and a further threaded hole 134 corresponding to a post 119 extending downward from the bottom of the partition and a further threaded hole 120 disposed at the partition ~~between the recesses 115, 117~~ for locating the first rear positioning lock plate 13. It can be seen in the figures that the post 119 ~~extends down from the recess 117 to pierce~~ pierces the aperture 133 and a bolt 135 is utilized to engage with the threaded holes 134, 120 respectively so as to secure the first rear positioning lock plate 13 ~~being located~~ to the partition in the recess 117 as protect for the first base disk 11. It is noted that ~~no specific spots are required for arranging~~ the post

119 and the threaded hole 120 ~~so that it~~ can be ~~accepted in case of the post 119 and the threaded hole 120 being~~ disposed at any places at the partition as long as ~~under a condition of~~ the first rear positioning lock plate 13 is capable of being ~~corresponding~~ fixedly attached to the first base disk 11.

The insertion member 14 is composed of an insert head 141, a pin 142, an adjustable bolt 143, an elastic body 144 ~~147~~ and a cap 145 for the elastic body 144 ~~147~~. The insert head 141 is hollow with two ~~eonic~~ conical end parts and ~~inner~~ internal screw threads respectively. A ball 146 ~~and the~~ with an elastic body 147 such as a spring or a spring plate ~~are~~ is placed therein from the upper end thereof and fastened with a setscrew 148. The insertion head ~~member 14 at the lower end part thereof~~ is provided with a flat part 1411 at the lower conical end thereof corresponding to the elongated hollow center so as to loosely fit with the elongated hollow center ~~part~~ 122 ~~of the front positioning plate 12~~. The middle part of the insert head 141 has a transverse fitting hole 1412 for being inserted through with the pin 142, ~~at the middle section thereof~~ The pin 142 has a recess part 1421 at the middle section thereof and is inserted into ~~a~~ the fitting hole 1412, which is perpendicular to the axial direction of the insert head 141 and ~~passes across~~ crosses the axis of the insert head 141[,] such that the ball 146 can be located at the recess part 1421 ~~because of~~ against the elastic force of the elastic body 147 to constitute ~~and~~ a tight fit between the ball 146 and the elastic body 147. Hence, ~~constitutes~~ the insertion member 14 is formed as a resilient positioning device at the upper and the lower parts thereof ~~having elastic positioning structure~~.

As the foregoing ~~Thus~~, the first front positioning plate 12 and the first rear positioning lock plate 13 ~~can be~~ are secured to the first base disk 11 ~~by way of~~ with bolts 15 engaging with the threaded holes 131 via ~~passing through and being fastened to~~ the threaded holes 121, 111[,] ~~131~~ after the first front positioning plate 12 being placed in the recess 115 and the first rear positioning lock plate 13 being placed in the recess 117. Because the four threaded holes 121 are equally spaced from each other, the first front positioning plate 12 and

the first rear positioning lock plate 13 have two orthogonal ~~adjustment~~ adjustable directions respectively for different postures of the artificial model at the legs thereof. Next, the insert head 141 ~~at the elongated flat part 1411 thereof~~ is arranged to pass through the elongated hollow part 122 ~~of the front positioning plate 12~~ from the top of the first base disk 11 via the flat part 1411 to constitute a state of being immobilized. Then, the ~~adjustment~~ adjustable bolt 143 ~~is arranged to pass~~ passes through the cap 145 and the elastic body 144 sequentially to engage with the lower end of the insert head 141 ~~disposed~~ under the first base disk 11 ~~with~~ against the elastic body 144 pressing ~~against~~ with an end of the elastic body 144 pressing the ~~recess~~ recessing 124 at the lower side of the first front positioning plate 12. In this way, the male joining part ~~member~~ 10 can be set up completely. Due to the threaded holes 111[,] and the through holes 121 being provided with countersinks ~~a countersink respectively~~, a flexible ~~adjustment~~ adjusted space is available between the first front positioning plate 12 and the first base disk 11 to allow the bolts 15 being capable of fastening the first front positioning plate 12 and the first base disk 11 firmly. Further, the ~~recess~~ recessing 124 ~~of the front positioning plate 12~~ provides a function ~~of~~ for locating the elastic body 144 to prevent the elastic body 144 from slip and the central protrusion part 123 on the first front positioning plate 12 ~~can limit~~ avoids the insert head 141 ~~elastic body 144 from~~ moving away for enhancing ~~to enhance~~ effect of locating the elastic body 144 ~~being located~~. Once the ~~adjustment~~ adjustable bolt 143 ~~of the insertion member 14 is engaged to~~ engages with the insert head 141, a bias force resulting from the elastic body 144 ~~being biased~~ created between the ~~recess~~ recessing 124 ~~of the front positioning plate 12~~ and the cap 145 can pull down the insert head 141. The function of the force will be explained in detail underneath.

Referring to Figs. 4 to 6, the coupling device for an artificial model according to the present invention further provides a female joining part 20, which ~~and the female joining member 20~~ includes a second base disk 21, a

second front positing plate 22 and a second rear positioning lock plate 23.

The second base disk 21 ~~at the periphery thereof~~ is provided with an upright rim 213 at the periphery thereof and ~~at the center thereof is provided with~~ a second hollow ~~central part~~ center 212. Two ~~opposite~~ threaded holes 214 are opposite to each other with respect to the axis of the second hollow center ~~central part~~ 212 and disposed near the upright rim 213. ~~pierce the base disk 11 and the~~ The two threaded holes 214 extend upward through two cylindrical posts attached to the upper facial side of the second base disk 21 for locating the second base disk 21 at another one of the connecting surfaces on the hip part and the thigh part. ~~allow the base disk 21 to be located at another one of the connection interfaces on the separated hips.~~ The second base disk 21 ~~at two facial sides thereof~~ has a recess 215, 217 respectively at two facial sides thereof and the recesses 215, 217 ~~at the circumferences thereof~~ have a flange 216, 218 respectively at the circumferences thereof. A second partition between the recesses 215, 217 surrounds the second hollow center ~~central part~~ 213 and is provided with four threaded holes 211 ~~111~~ with a countersink bottom ~~top~~ respectively.

The second front positioning plate 22 is disposed in the recess 215 of the second base disk 11 with a hollow ~~part~~ center 222 ~~at the center thereof~~ for being inserted with the insert head 141. A plurality of radial grooves 223 ~~are provided to~~ extend from the periphery of the hollow ~~part~~ center 222 equidistantly and two opposite ones of the radial grooves 223 constitute a space available for being passed through with the pin 142 of the insertion member 14. An elongated nest 224 is provided between every two neighboring radial grooves. In addition, the second front positioning plate 22 is provided with threaded holes 221 corresponding to the threaded holes 211 of the second base disk 21 and each of the threaded holes 221 is composed of two opposite countersinks and surrounded with ~~has~~ a conical ~~top~~ end 211 extending outward from the ~~upper end~~ top thereof.

The second rear positioning lock plate 23 is disposed in the recess 217

of the second base disk 21 with a hollow space 232 and four threaded holes 231 corresponding to the threaded holes 211 of the second base disk 21 too. ~~and the threaded holes 221 of the front positioning plate 22.~~ Further, the second rear positioning lock plate 23 has an aperture 233 and a threaded hole 234 corresponding to a post 219 and a threaded hole 220 disposed at the second partition ~~between the recesses 215, 217~~ for locating the second rear positioning lock plate 13. Due to the post 219 piercing the aperture 233 and a bolt 235 being utilized to engage with the threaded holes 234, 220 respectively, the second rear positioning lock plate 13 can be located in the recess 117 ~~securely so as~~ and secured to ~~protect~~ the second base disk 21 ~~11~~. It is noted that ~~no specific spots are required for arranging~~ the post 219 and the threaded hole 220 ~~and it is all right as long as the post 219 and the threaded hole 220~~ are disposed at any places under a condition of the second rear positioning lock plate 23 being corresponding to the second base disk 21.

Thus, as the second front positioning plate 22 is placed in the recess 215 and the second rear positioning lock plate 23 is placed in the recess 217, the second front positioning plate 22 and the second rear positioning lock plate 23 can be secured to the second base disk 21 by way of bolts 25 passing through and being fastened to the threaded holes ~~221, 211,~~ 231 via the through holes 221, 211. Because the four threaded holes ~~121~~ are equally spaced from each other, the second front positioning plate 22 and the second rear positioning lock plate 23 have two orthogonal ~~adjustment~~ adjustable directions respectively for different postures of the artificial model at the legs thereof. In this way, the female joining ~~member~~ 20 can be set up completely. Due to the threaded holes 211, 221 being provided with a countersink respectively, a flexible ~~adjustment~~ adjusted space is available between the second front positioning plate 22 and the second base disk 21 to allow the bolts 25 being capable of fastening the second front positioning plate 22 and the second base disk 21 firmly.

Referring to Figs. 7A, 7B, and 8, ~~the insertion member 14 of the male joining part 10 at~~ the insert head 141 ~~thereof~~ is inserted into the hollow ~~part~~

center 222 ~~at the center~~ of the second front positioning plate 22 with the pin 142 passing through two opposite radial grooves 223 to allow the two base disks 11, 21 being attached with the two front positioning plates 12, 22 respectively. Then, the male joining part ~~member~~ 10 is turned to allow the pin 142 rotating to the recess 224 at the lower side of the second front positioning plate 22. Because the radial grooves 223 ~~at the inner rims thereof~~ have a chamfer at the inner rims thereof respectively to facilitate the pin 142 turning into the recess 224. Due to the first front positioning plate 12 with the central protrusion part 123 thereof and the elastic force of the elastic body 144 in the insertion part 14, a downward pull force ~~can generate~~ is generated to exert the insert head 141 and the pin 142 to locate the pin 142 in the recess 224. In this way, the male joining part 10 and the female joining part 20 are capable of being joined to each other tightly. Further, the radial grooves 223 and the recess 224 not only can offer different rotational directions to meet the requirement for different postures of the artificial model but also a distance between neighboring radial groove 223 and the recess 224 is short so that the rotational path is reduced considerably. Hence, it can be rotated easily ~~for saving~~ less labor hours and it is capable of avoiding the first front positioning plate or the pin 142 being worn out with ~~reduction of~~ high damage rate. When the pin 142 is located as shown in Fig. 8, ~~the~~ tightness of locating the pin 142 can be micro-adjusted with the ~~adjustment~~ adjustable bolt 143 and the male joining part 10 and the female joining part 20 can be joined together in an optimum state by way of the elastic body 144 ~~biasing~~ against the cap 145.

It is noted that the base disks 11, 21 have an appearance thereof corresponding to each other so that the upright rims 113, 213 result in a clearance being formed between the base disks 11, 21 to obtain contact between the base disks 11, 21 more flatly. Further, due to the male joining part 10 at the center thereof having the flange 116 corresponding to the flange 216 at the center of the female joining part 20, it is able to prevent the connection surfaces at the hips of the artificial model from being worn out caused by frictional

contacts.

It is noted that both the base disks 11, 21 have an appearance almost reflecting to each other so that the upright rims 113, 213 result in a clearance being formed between the first and second base disks 11, 21 to contact between the first and second base disks 11, 21 more smoothly. Further, due to the male joining part 10 at the center thereof having the flange 116 corresponding to the flange 216 at the center of the female joining part 20, it is able to prevent the connecting surfaces at the hip separation part of the artificial model from being worn out caused by frictional contacts.

Referring to Fig. 8 again, after the base disks 11, 21 being exactly joined to each other, the ~~elongated~~ flat part 1411 can be secured to the elongated hollow center ~~part~~ 122 due to the conical part 1413 being disposed next to ~~with~~ the ~~elongated~~ flat part 1411 at the lower end of the insert head 141. ~~thereof providing a conical part 1413, which~~ This is a feature not provided in the traditional artificial model[,] ~~and the~~ The function of the conical part 1413 will be described in detail hereinafter ~~underneath~~.

Referring to Figs. 9A and 9B, the male joining part 10 is attached to the upper side of a thigh 38 of the artificial model ~~669~~ and the female joining part 20 is attached to the hip part 39 of the artificial model ~~669 at a place~~ corresponding to the male joining part 10. The characteristic of the present invention is in that once the thigh 38 is pushed by a foreign force to actuate the first base disk 11 separating from the second base disk 21, the first base disk 11 can comply with the taper of the conical part 1413 and restore to the original position ~~by way of~~ due to the elastic force of the elastic body 144. ~~and the~~ The elastic body 144 ~~is disposed to surround~~ surrounds the ~~adjustment~~ adjustable bolt 143 and is disposed between the first front positioning plate 12 and the cap 145 such that the elastic body 144 ~~is biased against~~ extends to press the first front positioning plate 12 and the cap 145 tightly without offsetting. Hence, it is not necessary to detach the thigh 38 from the hip part 39 before a pair of trousers ~~can be~~ being put on to or taken off from the artificial

model and the only thing has to be done is to open the thigh 38 an appropriate angle as shown in Figs. 9A and 9B. ~~Although~~ It is noted that Figs. 9A and 9B ~~illustrate~~ illustrating the thigh 38 ~~is~~ being opened at the right side ~~and~~ or at the left side is only an example for explaining how the coupling device of the present invention works. ~~respectively, actually~~ Actually, ~~it~~ the thigh part 38 can be opened 360 degrees, that is, the thigh part 38 can be turned around with respect to a constant point of the base disks 11, 21, ~~surrounding the thigh 38~~ so that time spent for setting up the thigh part 38 can be saved and damage rate can be reduced dramatically ~~effectively~~. Further, the male joining part 10 and the female joining part 20 can be interchanged the positions thereof ~~in the artificial model~~ in practice, ~~and~~ Hence, positions of the joining parts 10, 20 at two ~~thighs~~ thigh parts 38 can be differently arranged as desired.

In addition, referring to Figs. 1 to 3 again, the insert head 141 of the insertion member 14 ~~at the insert head 141 thereof can be~~ is hollow with internal screw threads at both ends thereof and the ball 146 ~~and~~ with the elastic body 147 ~~are~~ is placed in the hollow space such that a screw rod 148 ~~is engaged to~~ engages with the internal screws at the upper end and the adjustable bolt 145 engages with the internal screws at the lower end to constitute a state of locating for the insertion member 14 being performed with double elastic bodies.

Moreover, the pin 142 ~~at the middle section thereof~~ has a recess ring 1421 ~~to~~ for the setscrew 148 being micro-adjusted to press ~~micro-adjust the screw rod 148 and~~ the ball 146 ~~below the screw rod 148 can press~~ against the recess ring ~~142~~ 1421 so that the first front positioning plate 12 can be micro-adjusted upward or downward ~~with the adjustable bolt 143~~ to obtain a precise engagement.

While the invention has been described with reference to preferred embodiments thereof, it is to be understood that modifications or variations may be easily made without departing from the spirit of this invention, which is defined by the appended claims.

MARKED-UP ABSTRACT

A coupling device for an artificial model includes a male joining part, ~~and~~ a female joining part and an insertion member. The male and female joining parts have a base disk attached with a front positioning plate and a rear lock plate respectively. The insertion member further includes an insert head, an adjustable bolt, a first elastic body, a cap, a pin, a ball, a second elastic body and a setscrew. The insertion member is inserted into the male and female joining part such that the male joining parts can open any angles with respect to the female joining part smoothly. [,] ~~which is joined to the male joining part tightly. The male joining part has the front positioning plate thereof providing a central circular protrusion, the insertion member thereof is composed of an insert head, a pin, an adjustment bolt, an elastic body and a covering cap with the insert head having a conical shape and an elongated flat part at the bottom thereof with the pin being inserted into the insert head along a radial direction of the insert head and passing through an axis of the insert head to form a shape of cross, and a hollow center thereof has a shape corresponding to the elongated flat part of the insert head such that the elongated flat part of the insert head can fit with the hollow center after being inserted into the hollow center with the adjustment bolt passing through the cap and the elastic body before engaging with the bottom of insert head. The female joining part has the front positioning plate with a center thereof providing a hollow part with a plurality of equidistant radial grooves and two opposite ones of the radial grooves are pierced with the pin; and a radial recess is disposed between two neighboring ones of the radial grooves respectively. Hence, the male joining member and the female joining member can be joined to each other tightly and be inserted into each other for achieving a purpose of positioning.~~